AMENDMENTS TO THE CLAIMS

1. (Currently amended) A column for use in an analytical temperature rising elution fractionation analysis of a crystalline or a semi-crystalline polymer sample solution ~~characterized in that~~comprising a column packing, wherein the column packing ~~of said column comprises~~ consists of elastic wires having a length per diameter (L/D) of at least 3.

2. (Currently amended) Column according to claim 1, wherein the ~~packing of said column comprises~~ elastic wires ~~having~~ have a Young modulus higher than 50 GPa.

3. (Currently amended) Column according to claim 1, wherein the ~~packing of said column comprises~~ elastic wires ~~having~~ have a thermal conductivity higher than 0.1 W cm^{-1} K^{-1}.

4. (Currently amended) Column according to claim 1, wherein the ~~packing of said column comprises~~ elastic wires ~~having~~ have a length of at least 2mm and a diameter of less than 1 mm.

5. (Previously presented) Column according to claim 1, wherein said elastic wires are made of stainless steel, metal, carbon fibers or glass fibers.

6. (Cancelled)

7. (Previously presented) Column according to claim 1, wherein said column is made of stainless steel, glass, ceramic, or a polymer.

8. (Previously presented) Column according to claim 1, said column having an internal diameter less than 20 mm and a length comprised between 50 and 500 mm. [["]]

9. (Previously presented) Device for use in an analytical temperature rising elution fractionation analysis comprising the column according to claim 1, a temperature controlling system for controlling the temperature of said column, a sample injector for injecting a polymer sample solution into said column, a pump for eluting the polymer fractions from said column and a detector for detecting eluting fractions of said sample solution.

10. (Currently amended) Device for use in an analytical temperature rising elution fractionation analysis comprising a column characterized in that the packing of said column comprises elastic wires having a length per diameter (L/D) of at least 3, a temperature controlling system for controlling the temperature of said column, a sample injector for injecting a polymer sample solution into said column, a pump for eluting the polymer fractions from said column and

a detector for detecting eluting fractions of said sample solution~~Device according to claim 9~~, wherein said detector is a differential refractive index (DRI) detector.

11. (Currently amended) A method for performing an ATREF analysis of a crystalline or a semi-crystalline polymer solution comprising the steps of:

injecting a sample of said polymer solution into a column characterized in that the packing of said column comprises elastic wires having a length per diameter (L/D) of at least 3;

~~the column according to claim 1~~,

crystallizing said polymer sample solution in said column over a cooling temperature gradient to produce a crystallized polymer sample while keeping solvent flowing through said column;

eluting said crystallized polymer sample by increasing the temperature of said column over a heating temperature gradient to produce eluted fractions of the polymer sample solution, said fractions being eluted in function of the temperature; and

measuring the concentration of the eluted fractions of polymer sample solution by means of a detector.

12. (Original) Method according to claim 11, wherein the concentration of the eluted fractions of polymer sample solution are measured using a differential refractive index detector.

13. (Previously presented) Method according to claim 11, wherein the column is provided in a temperature controlling system.

14. (Previously presented) Method according to claim 11, wherein an amount of polymer lower than 2.0 mg polymer is injected into the column.

15. (Previously presented) Method according to claim 11, wherein a volume of the polymer sample solution lower than 1.0 ml is injected into the column.

16. (Previously presented) Method according to claim 11, wherein said polymer sample solution is injected automatically.

17. (Original) Method according to claim 16, wherein said polymer sample solution is injected automatically at a flow rate lower than 2.0 mL/min.

18. (Previously presented) Method according to claim 11, wherein the crystallization of said polymer sample solution in said column is performed over a cooling temperature gradient with a maximum temperature below 210°C.

19. (Previously presented) A method according to claim 11, wherein the crystallization of said polymer sample solution in said column is performed at a cooling rate higher than 0.5 °C per minute.

20. (Previously presented) Method according to claim 11, wherein the elution of the crystallized polymer sample is performed over a heating temperature gradient with a maximum temperature up to 210°C.

21. (Previously presented) Method according to claim 11, wherein the elution of the crystallized polymer sample is performed at a heating rate higher than 0.5°C per minute.